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Recent Developments in Soviet Agriculture

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## Recent Developments in Soviet Agriculture

### A. Recent Trends in Production

1. In the period 1968-69 agricultural production was marked by fluctuation, increasing 5 1/2 percent in 1968 and falling 4 1/2 percent the following year. As a result, after reaching a record high level of output in 1968, farm output in 1969 dropped to nearly the level of output in 1967, and on a per capita basis, it registered an absolute decline (see Table 1).

2. Crop production in 1968-69 first increased 7 1/2 percent then fell 9 percent. The increase in total crop production in 1968 was due mainly to a bumper grain harvest of 135 million metric tons, ranking second only to the record crop of 140 million tons harvested in 1966 (see Table 3).

Increases in yields per acre for most crops were promoted by relatively favorable weather, improvements in tillage practices, the use of better plant varieties, and a somewhat larger supply of soil additives (fertilizer and lime). The overall decrease in crop production in 1969 included smaller harvests of grain, potatoes, sugar beets, cotton, and fruits and vegetables.

Crop raising was marked by generally unfavorable weather conditions which resulted in above-normal damage to winter grain and other fall-sown crops, prevented timely spring planting, and seriously compressed the time available for fall harvesting. The grain crop of 128 million tons was below both the 1968 level and the average level achieved in 1966-68 (132 million tons), yet

it was one-third above the near-disasterous grain harvests of 1963 and 1965.

This amount of grain should permit the USSR to meet current domestic needs for bread supplies in 1970, to fulfill current export commitments, and to maintain sizeable grain stocks.

3. While livestock production in 1969 was almost 4 percent above the 1967 level, most of this gain occurred in 1968. In that year, the number of livestock decreased, but output of major livestock products increased moderately (see Table 4). The lack of progress in increasing the output of major livestock products in 1968 continued in 1969. Declines in the output of meat (-4 percent), milk (-1 percent), and wool (-6 percent) more than offset a moderate increase in the production of eggs (3 1/2 percent) and led to a slight decrease in overall output of livestock products.\* The decline in meat production in 1969 reflected the convergence of several developments that either directly or indirectly impinged on output of meat, milk, wool, and other livestock products. In addition to the smaller carry-over of herds from the previous year, these developments included (1) a loss of livestock during the year due to adverse weather conditions, (2) a small decline in availability of feed per head of livestock, (3) a possible increase in the incidence of disease, and (4) the adoption of a policy of expanding depleted herds by foregoing slaughtering in 1969. Nevertheless, a limited success could be claimed in 1969: while the size of private herds continued to decline, the annual declines in overall inventories of livestock registered in the two previous years were arrested. A one percent gain in total value

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\* The index of total output of livestock includes changes in inventories of livestock held for investment purposes. As indicated in Table 1, there was a small increase in total livestock output including changes in inventories.

of livestock inventories reflected a substantial buildup in hog numbers, which by the end of 1968 had dropped some 10 1/2 million (or nearly 20 percent) below the 1965 level. Even with the increase in 1969 of more than 7 million head, hog numbers remained 6 percent below 1965 levels. This increase, moreover, was nearly nullified by a major reduction in inventories of sheep and a small decline in cattle numbers. Cattle, sheep, and goat herds have now declined to the lowest level since the end of 1965. The buildup in hog inventories marked a retreat from the policy of encouraging hog raising only on specialized farms. The reduction in sheep flocks resulted from severe winter weather in the first quarter of the year.

#### B. Current Developments in Agricultural Policy

4. When Khrushchev's successors assumed control in late 1964, they were confronted with near stagnation of agricultural production in the face of steadily rising demand for farm products. Hence, a program for improving the state of Soviet agriculture, popularly termed the Brezhnev Program, was spelled out at a plenum of the CPSU in March 1965 and elaborated upon at the Twenty-Third Party Congress and at another Plenum in the Spring of 1966. Included in a long list of remedial measures were a number of provisions for expanding the production base of the farm sector during the period 1966-70. These were highlighted by targets requiring a doubling of deliveries to farms of new machinery and equipment and soil additives (fertilizer and lime) in 1966-70 in comparison with 1961-65. In addition, a major boost in investment in land reclamation was scheduled to result in an expansion of nearly 30 percent in the stock of irrigated and drained land by 1970.

5. Steps were taken in 1965-66 to implement major parts of the Brezhnev Program, but the striking success in increasing farm output in 1966 evidently led to a considerable weakening of the priority of the farm sector in the allocation of resources in 1967-69. Those parts of the program that did not depend primarily on industrially-produced goods for agriculture -- such as plans for the use of improved cropping practices and for the introduction of a variety of incentives for farmers -- were put into effect, while those parts of the program that required a sharp acceleration in investments and provision of industrially produced materials were permitted to lag far behind the original schedule. An initial spurt in 1965-66 in the flow of industrially produced goods to farms was followed in 1967-69 by major cut-backs from the original plan for deliveries of both investment goods (tractors, trucks, and agricultural machinery) and industrially produced materials (fertilizer, lubricants, electric power, and the like). Even these new plans have not been met except in the case of fertilizer.

6. Deliveries of tractors and agricultural machinery during 1966-70 were scheduled to be nearly two-thirds above the deliveries for 1961-65. But during 1966-69 actual deliveries were only slightly more than one-third above the first four years (1961-64) of the previous five-year period. Similarly, deliveries of trucks during 1966-69 were slightly more than three-fourths over 1961-64; a staggering 163 percent increase was targeted for 1966-70. The shortfall in investment in agricultural machinery and equipment means slower growth in inventories of farm machinery. During 1966-69,

it is estimated that parks of the major types of machinery increased at an average annual rate of about 4 percent. If this tempo continues, the increase in total inventories of machinery in 1966-70 will be less than half that originally planned. For example, the park of tractors was to rise from about 1.6 million at the end of 1965 to 2.5 million at the end of 1970: combines from 520,000 to 790,000. At current estimated rates of progress, the net additions will be about 380,000 tractors and 105,000 combines or roughly 40 percent of planned increases.

7. Brezhnev's program called for a large expansion in the use of fertilizer and lime as a means of boosting crop yields. Annual deliveries of fertilizer to agriculture were to reach 55 million tons by 1970, double the 1965 level. The new plan also called for the liming of nearly 30 million hectares of croplands during 1966-70, a goal that would require doubling output of lime for agricultural purposes by 1970. Fertilizer deliveries - - which amounted to almost 39 million tons in 1969 - - are nearest on schedule. Moreover, the addition of 11 million tons of new fertilizer capacity in 1969 indicated marked progress. Although this addition to capacity was below the planned 13 million ton increase, it was more than twice the new capacity added in 1968 and more than three times that added in either 1966 or 1967. In the past four years, however, lime was applied to only about 60 percent of the total area planned for 1966-70. Much of the blame for this lag is officially placed on the lack of transport and spreading equipment.

8. Under the Brezhnev Program, newly<sup>1</sup> irrigated and drained land was to provide nearly one-third of the increase in gross agricultural production and grain output planned for 1966-70. Although investment in land reclamation thus far has proceeded at a somewhat brisker pace than other parts of the

investment program, the total area reclaimed has not yet increased appreciably.

Its average quality, however, is now higher. In 1966-69, investment in land amelioration was slightly more than 7 billion rubles, about 60 percent of the planned total for 1966-70. But annual gross additions of irrigated and drained land remained at about the 1965 level and cumulatively are only slightly more than one-half of the overall target for 1966-70. Because of this lag and because of stepped-up retirements from use of land previously reclaimed, the total stock of drained and irrigated land has remained largely unchanged.

C. Outlook for 1970

9. Following the decline in agricultural production in 1969, the regime announced plans for an 8 1/2 percent increase in gross agricultural output in 1970. A crash program to expand the agricultural resource base has not been undertaken; yet it does not appear that stagnation in output will be accepted. Although the scheduled allocation of machinery and most other major inputs in 1970 is at or below the unimpressive rates of growth in 1966-69, significant increases are planned in the allocation of resources, such as soil additives, that are directly related to short-run gains in productivity. Deliveries of mineral fertilizer in 1970 are scheduled to increase by about 20 percent, a substantial increase over the 10 percent average annual rate of growth in deliveries for the preceding four years (1966-69). In addition, the capacity for mineral fertilizer production is to increase by 8.6 million tons in 1970, somewhat below the all time high of 11 million<sup>tons</sup> of capacity commissioned in 1969 but more than twice the average annual increase for 1966-68. \_\_\_\_\_

\_\_\_\_\_ The 1970 plan also calls for the application of lime to 5.5 million hectares (13.6 million acres). This amounts to an increase of 12 percent over 1969, but does not represent a significant deviation from the average annual increase of about 13 1/2 percent from 1966 to 1969.

10. Short-run increases in output are also achievable by encouraging production in the private sector, and there are some indications that this activity is being stimulated. Party leaders have recently called upon local organs to accelerate the sale of young animals -- especially pigs -- to private households, to expand sales of grain and other feedstuffs to the private sector and to encourage households to accept grain as in-kind payments for work in collective farms. Efforts are also being made to reverse the policy of specialization on collective and state farms which will enable these enterprises to maintain a flow of young stock to individual collective farmers and state farm workers.



Note to Tables on Indexes of Agricultural Output

The indexes shown in Table 1 are based on the physical output for most crops and animal products, including changes in inventories of livestock, weighted by 1960 prices. In order to obtain a net measure of the physical amounts available for sale and home consumption, deductions were made for the amounts of grain and potatoes, and milk fed to livestock and for the amounts of grain and potatoes used as seed. The physical commodity series rely in part on the acceptance of official data; in part on independent estimates for selected products (the individual grains); and in part on estimates that reflect downward adjustments of official claims for other products (oilseeds, meat, and milk). Official data is available for the 1969 production of most commodities, but the output of other products must be estimated (fruit, fiber flax, tobacco, makhorka, tea, silk, cocoons, and minor oilseeds).

Differences between the figures shown in Tables 1 and 2 and those given in US Congress, Joint Economic Committee, Soviet Economic Performance: 1966-67, p. 28, are due to the following:

(1) The sample of commodities included in the index has been expanded from 11 to 17 commodity groups. Additional commodity groups include: fruits and berries, tobacco, makhorka, tea, silk, cocoons, and minor oilseeds.

(2) 1960 price weights have been substituted for 1958 price weights in aggregating the output of farm products expressed in physical terms. The 1960 prices are the average realized prices received by all producers

(collective and state farms and individual producers) for output sold through state channels and the collective farm market.

(3) Production data (official or estimated) for 1967 for several commodities have been changed.

For a more detailed description of the indexes (sources of data, coverage of commodity sample, methods of estimation), see Joint Economic Committee, New Directions in the Soviet Economy, Part II-B, p. 368-71.

Special Problem: Production Statistics for Meat, 1969

As suggested above, Western analysts generally have agreed that official Soviet production statistics for some of the major agricultural commodities contain considerable exaggeration. As indicated, although most publicity has been given to the inflation of statistics on grain, there is also evidence of exaggeration in output claims for meat, milk, and selected oilseeds. Official claims are therefore discounted to determine estimates of meat production. From 1950 to 1956, a standard discount of 10 percent was applied in deriving an estimated series of annual outputs. From 1957 to 1963, during Khrushchev's campaign to "catch up" with the United States in meat output, higher and varying discounts were used, reflecting pressures believed to have been placed on reporting officials at various levels to fulfill unrealistic goals which led to a greater-than-usual degree of falsification during this period. In 1964-68, however, a standard discount rate of 12 percent was applied to official estimates. This reflected collateral evidence bearing on the validity of official claims of meat output which did not suggest the need for either a varying rate of discount or as high a

rate as for the latter years of the Khrushchev era. In 1969, however, the evidence at hand suggest that a somewhat larger deduction was in order when production was compared to 1968. It was officially claimed that the combined output of meat by the socialized and private sectors of the economy remained at the 1968 level. But a reduction in output of industrially processed meat, which constitutes nearly 90 percent of the total meat output of the socialized sector of the economy, was also announced. To maintain meat output at the 1968 level, a reduction in total meat output of the socialized sector would have to be compensated for by an increase in production of meat by the private sector of the economy, but, based upon the past relationship between the size of privately-owned livestock herds and the production of meat by the private sector, such an increase appears unlikely. In addition, Brezhnev, in a speech in late November to the Kolkhoz Congress, admitted that per capita consumption of meat in 1969 was 4 percent below that in 1968. In summary, these indicators of meat output by the socialized sector and by the private sector imply a decline in total meat output, in contrast to the official claim that output in 1969 was maintained at the 1968 level. Therefore, in 1969 the official claim for meat output is discounted by 15 1/2 percent, leading to a drop of 4 percent below the estimated level of output in 1968.

Table 1

USSR: Indexes of Net Agricultural Production, 1950-69

(1960=100)

|      | <u>Total</u> | <u>Crops</u> a/ | <u>Livestock</u> b/ |      | <u>Total</u> | <u>Crops</u> a/ | <u>Livestock</u> b/ |
|------|--------------|-----------------|---------------------|------|--------------|-----------------|---------------------|
| 1950 | 69           | 84              | 56                  | 1960 | 100          | 100             | 100                 |
| 1951 | 63           | 68              | 59                  | 1961 | 107          | 107             | 107                 |
| 1952 | 70           | 84              | 58                  | 1962 | 105          | 101             | 110                 |
| 1953 | 72           | 80              | 66                  | 1963 | 102          | 99              | 105                 |
| 1954 | 74           | 81              | 67                  | 1964 | 116          | 130             | 103                 |
| 1955 | 83           | 93              | 75                  | 1965 | 118          | 115             | 122                 |
| 1956 | 94           | 107             | 83                  | 1966 | 128          | 133             | 124                 |
| 1957 | 94           | 96              | 93                  | 1967 | 129          | 133             | 126                 |
| 1958 | 102          | 109             | 96                  | 1968 | 136          | 143             | 130                 |
| 1959 | 100          | 96              | 103                 | 1969 | 130          | 130             | 131                 |

a/ Crop production less adjustments for seed and feed.

b/ Livestock products adjusted for changes in livestock numbers.

Table 2

USSR: Average Annual Rates of Growth of Net Agricultural Output,  
Selected Periods, 1951-69 a/

|               | St. eight Annual Average | Moving Average for 3 Years b/ | Percent |
|---------------|--------------------------|-------------------------------|---------|
| 1951-69 ----- | 3.4                      | 3.6 c/                        |         |
| 1951-60 ----- | 3.8                      | 4.3                           |         |
| 1961-65 ----- | 3.4                      | 3.4                           |         |
| 1961-69 ----- | 3.0                      | 2.7 c/                        |         |
| 1966-69 ----- | 2.5                      | 1.9 c/                        |         |

a/ The base year for the calculations shown in each line is the year before the stated initial year of period; i.e., the average annual rate of increase for 1951-68 is computed by relating production in 1968 to base year 1950.

b/ Average annual rates of growth were computed by relating the three-year average for the terminal year (for example, using the average for 1959, 1960, and 1961 as output for 1960) to a similar three-year average for the base year 1950.

c/ End year is not a three-year average but net agricultural output for that year only.

Table 3

USSR: Production of The Major Crops, 1960-69 a/

|  | Million metric tons |                |                |               |                |                |                |                |                |              |
|--|---------------------|----------------|----------------|---------------|----------------|----------------|----------------|----------------|----------------|--------------|
|  | 1960                | 1961           | 1962           | 1963          | 1964           | 1965           | 1966           | 1967           | 1968           | 1969         |
| Total grain: b/<br>Estimated c/<br>Soviet official | 93.0<br>125.5       | 110.0<br>130.8 | 109.0<br>140.2 | 92.0<br>107.5 | 120.0<br>152.1 | 100.0<br>121.1 | 140.0<br>171.2 | 122.0<br>147.9 | 135.0<br>169.5 | 128<br>160.5 |
| Wheat:<br>Estimated b/<br>Soviet official          | 46.0<br>64.3        | 55.0<br>66.5   | 57.0<br>70.8   | 40.0<br>49.7  | 48.0<br>74.4   | 48.0<br>59.7   | 85.0<br>100.5  | 63.0<br>77.4   | 74.4<br>93.4   | 70.5<br>NA   |
| Potatoes   | 84.4                | 84.3           | 69.7           | 71.8          | 93.6           | 88.7           | 87.9           | 95.5           | 102.2          | 91.7         |
| Vegetables   | 16.6                | 16.2           | 16.0           | 15.2          | 19.5           | 17.6           | 17.9           | 20.5           | 19.0           | 18.2         |
| Sugar beets (factory use)                          | 57.7                | 50.9           | 47.4           | 44.1          | 81.2           | 72.3           | 74.0           | 87.1           | 94.3           | 71.0         |
| Unflower seeds:<br>Estimated d/<br>Soviet official | 3.65<br>3.97        | 4.37<br>4.75   | 4.41<br>4.80   | 3.94<br>4.26  | 5.57<br>6.06   | 5.01<br>5.45   | 5.66<br>6.15   | 6.08<br>6.61   | 6.15<br>6.68   | 5.80<br>6.3  |
| Seed cotton  | 4.29                | 4.52           | 4.30           | 5.21          | 5.28           | 5.66           | 5.98           | 5.97           | 5.95           | 5.71         |

/ Soviet official data unless otherwise indicated.

/ Including pulses.

/ Estimate of usable grain. Net usable grain is estimated as the gross output minus excess moisture, unripe and damaged kernels, weed seeds, and post-harvest losses incurred in the loading and unloading of grain between the combine and storage facilities. Estimates of net production of grain have reflected a reduction of between 14 percent (1963) and 26 percent (1960) in the official claims for gross output of grain.

/ Official data for gross output have been reduced by about 8 percent to allow for excess moisture and trash that results when "bunker weight" is used in determining the size of the harvest.

Table 4

USSR: Livestock Numbers and Production of Major Livestock Products, 1960-69

|  | A. Livestock Numbers at End of Year (Million Head) |       |       |       |       |       |       |       |       |       |
|--|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|  | 1960   | 1961  | 1962  | 1963  | 1964  | 1965  | 1966  | 1967  | 1968  | 1969  |
| attle  |  |       |       |       |       |       |       |       |       |       |
| Total  | 75.8   | 82.1  | 87.0  | 85.4  | 87.2  | 93.4  | 97.1  | 97.2  | 95.7  | 95.0  |
| Cows   | 34.8   | 36.3  | 38.0  | 38.3  | 38.8  | 40.1  | 41.2  | 41.6  | 41.2  | 40.6  |
| ogs  |  |       |       |       |       |       |       |       |       |       |
| sheep and goats                              | 58.7   | 66.7  | 70.0  | 40.9  | 52.8  | 59.6  | 58.0  | 50.9  | 49.0  | 56.1  |
|  | 140.3  | 144.5 | 146.4 | 139.6 | 130.7 | 135.3 | 141.0 | 144.0 | 146.1 | 136.3 |
| B. Production of Major Livestock Products a/ |  |       |       |       |       |       |       |       |       |       |
| eat b/                                       |  |       |       |       |       |       |       |       |       |       |
| Official                                     | 8.7  | 8.7   | 9.5   | 10.2  | 8.3   | 10.0  | 10.7  | 11.5  | 11.6  | 11.6  |
| Adjusted c/                                  | 7.4  | 7.4   | 8.1   | 8.5   | 7.3   | 8.8   | 9.4   | 10.1  | 10.2  | 9.8   |
| ilk d/                                       |  |       |       |       |       |       |       |       |       |       |
| Official                                     | 61.7   | 62.6  | 63.9  | 61.2  | 63.3  | 72.6  | 76.0  | 79.9  | 82.3  | 81.6  |
| Adjusted e/                                  | 55.5   | 56.3  | 58.1  | 56.3  | 59.5  | 68.2  | 71.4  | 75.1  | 77.4  | 76.7  |
| eggs (in billions) f/                        | 27.5   | 29.3  | 30.1  | 28.5  | 26.7  | 29.1  | 31.7  | 33.9  | 35.7  | 37.0  |
| ool (thousand metric tons) g/                | 357  | 366   | 371   | 373   | 341   | 357   | 371   | 395   | 415   | 390   |

a/ Million metric tons except as noted.

b/ Slaughter weight basis, including slaughter fats, edible by-products, poultry, and miscellaneous meats.

c/ Official data reduced by 12-17 percent to arrive at estimated amount of meat actually produced.

d/ Includes milk fed to calves and pigs.

e/ Official data reduced by 6-10 percent to arrive at estimated amount of milk actually produced.

f/ Soviet official data.

g/ Grease basis.